

Toronto Union Station

Fifth Façade Conservation

Roofscape and Skylights

October 3, 2014

Toronto Union Station Revitalization Project

The Fifth Façade: Roofscape and Skylights

Introduction

1



Roofscape and Skylights Conservation

- Presenters
- Scope of Work
- Focus of Talk
- Other Examples

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Introduction

presenters



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Introduction

scope of work

Fifth Façade, West Wing & Centre Block (East Wing current):

- Copper Roofs;
- Flat Roofs;
- Skylights;
- Copper Roof-top Enclosures;
- Roof Penetrations and Drainage;
- Mechanical/Electrical Systems;
- Building Maintenance & Safety.



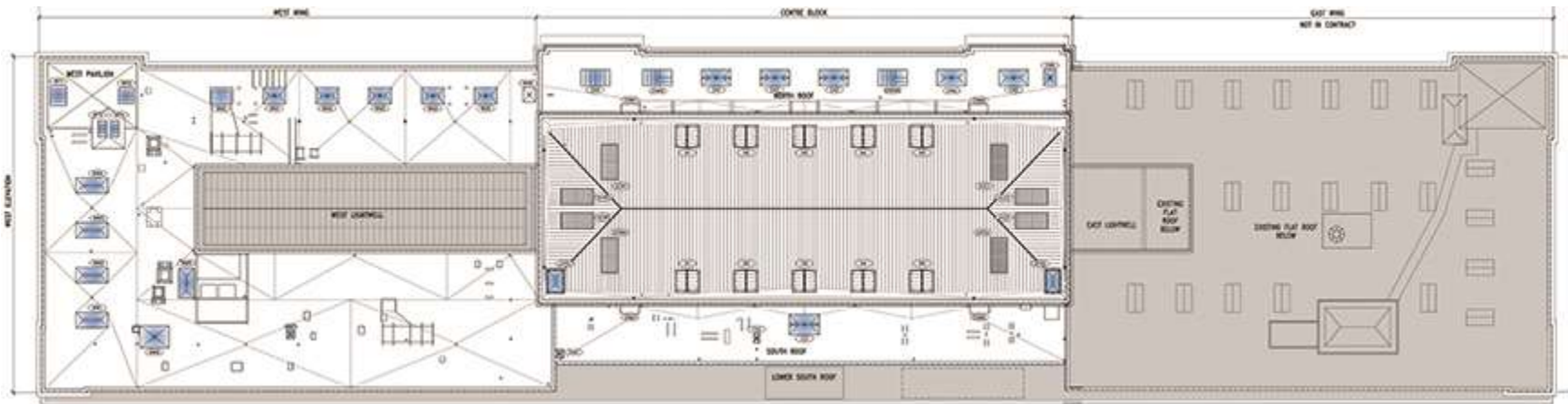
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Introduction

focus of talk

Skylights: 29 in total:

- Served as natural light to the 4th floor;
- Mid-level roof construction blocked exterior walls at 4th floor level;
- Laylite at interior ceiling levels diffused the natural light into the office spaces.



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Existing Conditions

2



Conservation Approach: Rehabilitation

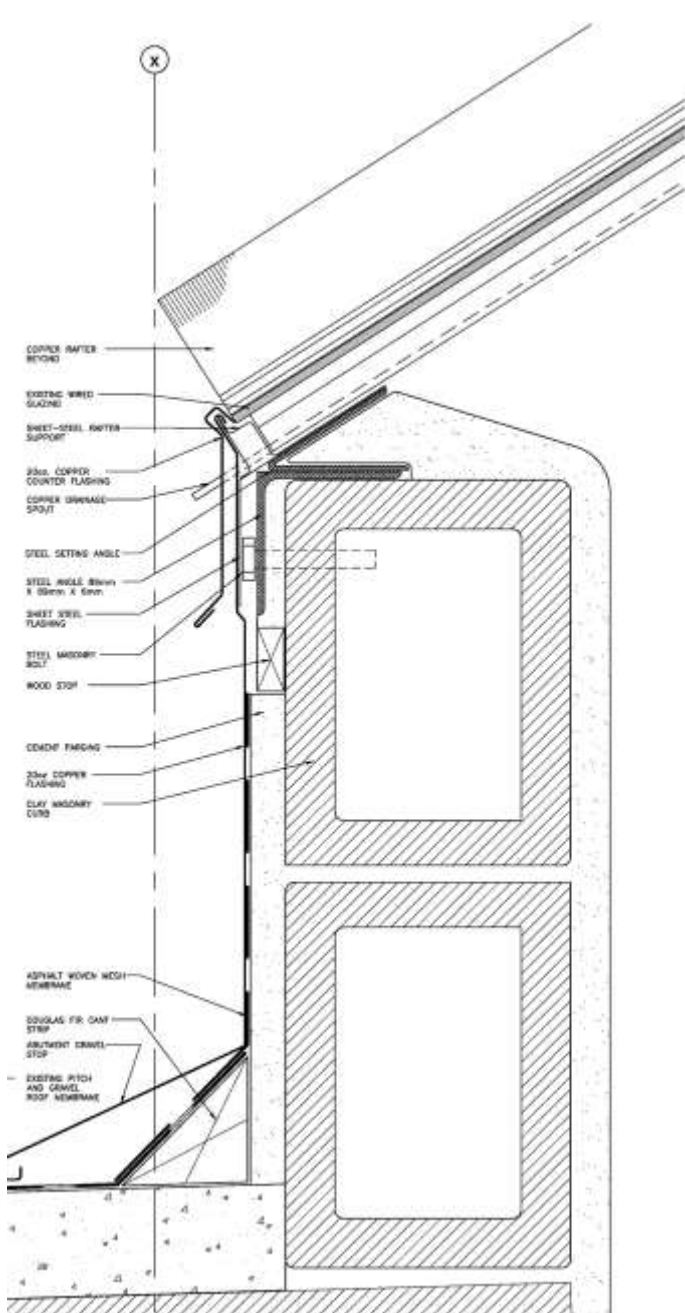
- Summary
- Sub-structure
- Metal Cladding
- Glass

Union Station Existing Conditions summary

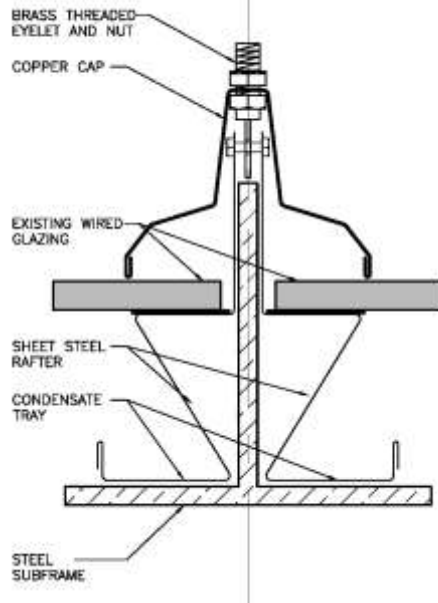
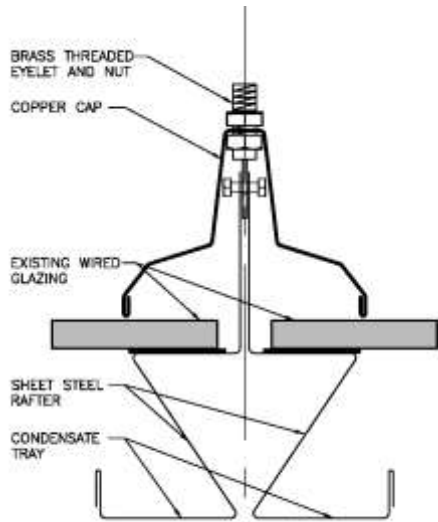


- Extensive oxidization, wear and tear of exposed copper surfaces;
- Cap flashings, glass stops and soldered connections have failed;
- Mild steel sub-frame system extensively corroded and damaged;
- Extensive damage of glass units;
- Some deterioration of masonry parapet walls and curbs;
- Skylights structural integrity is compromised.

Union Station Existing Conditions structure



Union Station Existing Conditions cladding



Union Station Existing Conditions

glass



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Interventions

3



Proposed Rehabilitation

- Summary
- Envelope System
- Structure
- Cladding & Condensation Control
- Glass Retrofit

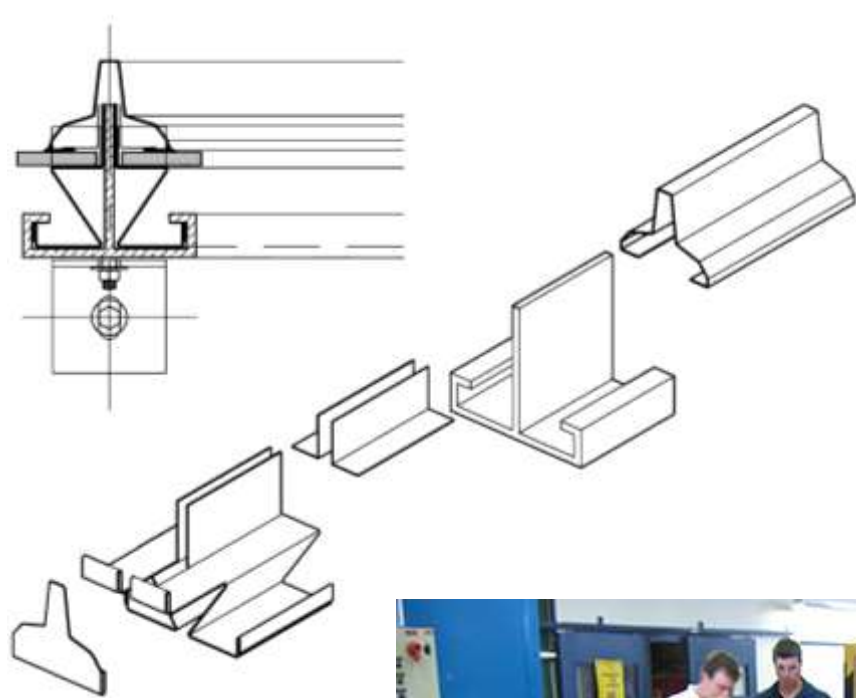
Union Station Interventions summary



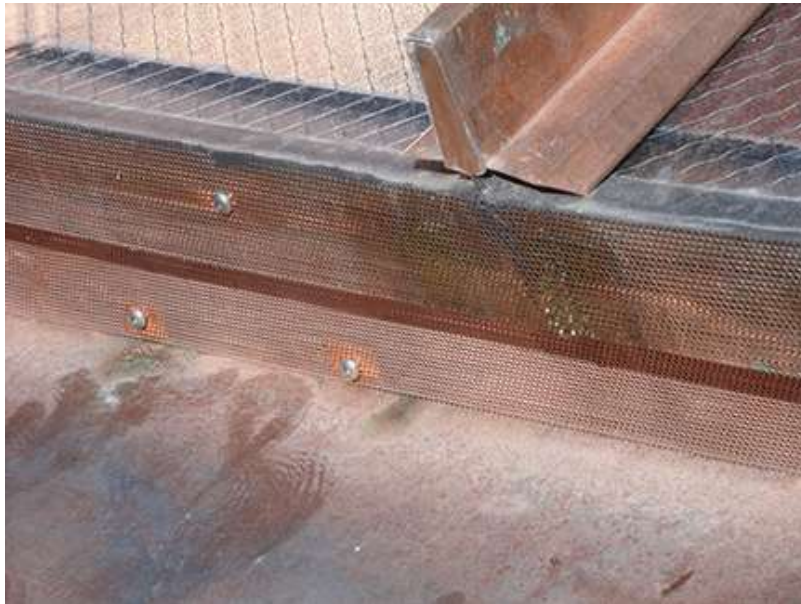
- Complete replacement-in-kind of all skylights including metal sub-frames as all are deemed beyond repair or restoration;
- New skylights over existing capped openings;
- Salvage original glass for re-use where possible;
- Salvage original ventilator finials for re-use where possible;
- Improved ventilation and weather tightness of original design;
- Repair masonry parapet walls and curbs.



Union Station Interventions structure



Union Station Interventions cladding



Union Station Interventions glass



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Fabrication

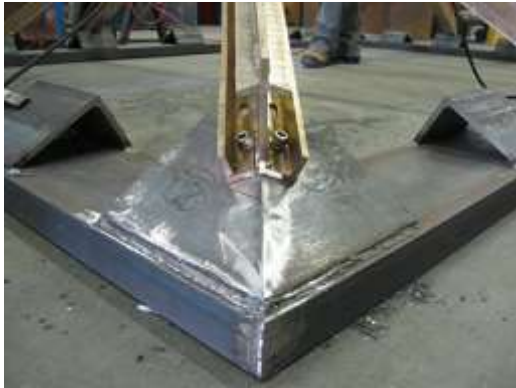
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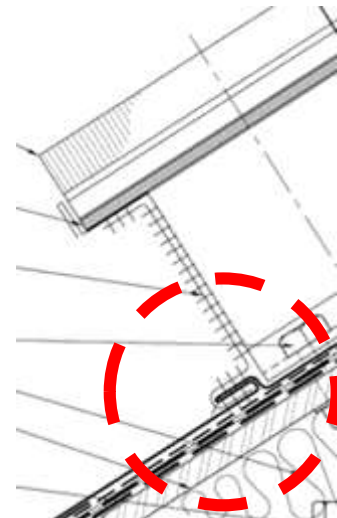
Construction and Installation

- Shop Issues
- Installation
- Mock-up Final

Union Station Fabrication shop issues



- Base frame and pads;
- Structural welds and lateral stability;
- Copper cladding joinery;
- Copper cap holdowns;
- Vent screens;
- Glass reclamation.



Union Station Fabrication installation



Union Station Fabrication mock-up



Union Station Fabrication mock-up

